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10/033,808

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Roger A. Karam

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12/14/2004

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EXAMINER

TRIEU, VAN THANH

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/033,808

Applicant(s)

KARAM, ROGER A.

Examiner

Van T Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22, 24-33 and 35-46 is/are rejected.
- 7) ☒ Claim(s) 23 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## ***DETAILED ACTION***

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 6-17, 19-21, 24-29, 31-33, 35-40 and 42-46 are rejected under 35 U.S.C. 102(b) as being anticipated by **Bouhenguel et al** [US 5,742,513].

Regarding claim 1, the claimed detector system for detecting a signal disruption of an AC-signal by a DC-current in a powered networking system, the system comprising: the signal analyzer subsystem in operative electrical communication with the powered networking system, the analyzer adapted to receive the AC-signal from the networking system and to analyze the AC-signal based on a predetermined characteristic of the AC-signal and to generate an analyzer output (the test signal analyzer 52 receives the selected networking DSP output AC signal data and the reference data from the memory 41, see Figs. 4 and 5, col. 4, lines 41-64 and col. 6, lines 1-14); and the comparator subsystem in operative electrical communication with the analyzer subsystem, the comparator adapted to receive and to compare the analyzer output with a predetermined reference source so as to detect an AC-signal disruption (the test signal analyzer 52 also compares the reference data with the selected test signal data to determine whether or not a possible of malfunction to isolation/disruption the AC

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signal, see Figs. 4-11, col. 3, lines 18-27, col. 6, lines 14-28, col. 7, lines 1-46 and col. 9, lines 23-42).

Regarding claim 2, all the claimed subject matters are cited in respect to claim 1 above, and including the comparator output to an error identifier unit and to store in the memory 41, see Figs. 5 and 7.

Regarding claim 3, all the claimed subject matters are cited in respect to claim 1 above, and including the notification (the indicator of error in step 101 of Fig. 7, col. 7, lines 43-56 and col. 8, lines 35-43).

Regarding claim 4, all the claimed subject matters are cited in respect to claim 1 above, and including the communication networking over the AC power line 3, see Figs. 1 and 4, col. 4, lines 41-64)

Regarding claim 6, all the claimed subject matters are cited in respect to claim 1 above, and including the predetermined characteristic of the AC signal is voltage amplitude of the AC signal (see col. 11, lines 66-67 and col. 12, lines 1-7).

Regarding claim 7, all the claimed subject matters are cited in respect to claim 6 above, and including the analog analyzer and digital analyzer (the test signal analyzer 52 analyzes both analog and digital signal, see col. 5, lines 8-67 and col. 6, lines 1-14).

Regarding claim 8, all the claimed subject matters are cited in respect to claim 6 above.

Regarding claim 9, all the claimed subject matters are cited in respect to claim 8 above, and including the analog analyzer registers the measured predetermined characteristics of the AC signal in an analog storage medium (the test signal generator 50 generates analog test signal based on reference data retrieved from memory 41, which is then transmitted to the test analyzer 52, see Fig. 5, col. 6, lines 1-14).

Regarding claim 10, all the claimed subject matters are cited in respect to claims 8 and 9 above.

Regarding claim 11, all the claimed subject matters are cited in respect to claim 8 above, wherein the test analyzer 52 receives digital test signal.

Regarding claim 12, all the claimed subject matters are cited in respect to claim 8 above, and including the computer readable (the system 10 is communicated information with a remote computer, see col. 4, lines 55-67 and col. 15, lines 52-54).

Regarding claim 13, all the claimed subject matters are cited in respect to claim 8 above.

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Regarding claim 14, all the claimed subject matters are cited in respect to claim 8 above, and including the analyzer is adapted to conduct at least one of the measurement and registration of the predetermined characteristic time intervals (the sample periods 61 and 63, see Fig. 6, col. 6, lines 57-67 and col. 7, lines 1-15).

Regarding claim 15, all the claimed subject matters are cited in respect to claim 14 above, and the timer subsystem (the DSP algorithm processing of predetermined time, see col. 6, lines 36-67 and col. 7, lines 1-15).

Regarding claim 16, all the claimed subject matters are cited in respect to claim 15 above, and including the timer subsystem is a programmable to adjust the periodicity of the predetermined time intervals (the DSP processor is programmable to change period of the selected test signals, see col. 8, lines 18-25).

Regarding claim 17, all the claimed subject matters are cited in respect to claim 3 above, and including the predetermined reference is at least one of a predetermined reference voltage amplitude and a predetermined reference energy charge, which read upon the magnitude of the predetermined reference signals retrieved from the memory 41, see Fig. 5, col. 7, lines 1-30 and col. 12, lines 1-16).

Regarding claim 19, all the claimed subject matters are cited in respect to claim 17 above, and including the comparison determines if the registered characteristic is

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outside a predetermine range of the reference, thereby signifying the existence of an AC signal disruption in the powered networking system (the test signal analyzer 52 determined the results of comparison to determine whether or not a possible of malfunction or error to isolate the power signal, see col. 3, lines 22-27, col. 6, lines 12-30 and col. 7, lines 37-46).

Regarding claim 20, all the claimed subject matters are cited in respect to claims 117 and 19 above.

Regarding claim 21, all the claimed subject matters are cited in respect to claim 1 above, and including the

Regarding claim 24, all the claimed subject matters are cited in respect to claim 4 above, and including the data-relay system to transmit the AC signal from a first signal transformer to a second signal transformer, see Figs. 1, 4 and 5.

Regarding claim 25, the method claimed limitations are met by the apparatus claim 1 above.

Regarding claim 26, all the claimed subject matters are cited in respect to claims 4 and 25 above.

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Regarding claim 27, all the claimed subject matters are cited in respect to claims 2 and 25 above.

Regarding claim 28, all the claimed subject matters are cited in respect to claims 17 and 25 above.

Regarding claim 29, all the claimed subject matters are cited in respect to claims 10 and 27 above.

Regarding claim 31, all the claimed subject matters are cited in respect to claims 14 and 29 above.

Regarding claim 32, all the claimed subject matters are cited in respect to claims 15, 16 and 31 above.

Regarding claim 33, all the claimed subject matters are cited in respect to claims 19 and 25 above.

Regarding claim 35, all the claimed subject matters are cited in respect to claims 24 and 26 above.



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Regarding claim 36, all the claimed subject matters are cited in respect to claim 1 above.

Regarding claim 37, all the claimed subject matters are cited in respect to claims 4 and 36 above.

Regarding claim 38, all the claimed subject matters are cited in respect to claims 2 and 36 above.

Regarding claim 39, all the claimed subject matters are cited in respect to claims 17 and 36 above.

Regarding claim 40, all the claimed subject matters are cited in respect to claims 10 and 38 above.

Regarding claim 42, all the claimed subject matters are cited in respect to claims 14 and 40 above.

Regarding claim 43, all the claimed subject matters are cited in respect to claims 15 and 42 above.

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Regarding claim 44, all the claimed subject matters are cited in respect to claims 19 and 36 above.

Regarding claim 45, all the claimed subject matters are cited in respect to claims 23 and 38 above.

Regarding claim 46, all the claimed subject matters are cited in respect to claims 24, 25 and 37 above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bouhenguel et al** [US 5,742,513] in view of **Chang et al** [US 5,991,885].

Regarding claim 5, **Bouhenguel et al** fails to disclose the powered networking system utilizes twisted pair conductors as its signal medium. However, **Bouhenguel et al** teaches that the communication network includes a plurality of signal power line inputs 29, see Figs. 1 and 4, col. 4, lines 55-64 and col. 5, lines 1-7. **Chang et al** suggests that the networking hub 201 includes a feedback analyzer for comparing the presence signal with a reference signal to disrupt the presence signal when the voltage is above

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the threshold. The networks 201, 202 and 302 are connected by the twisted-pair wires 205, 305 and 502, see Figs. 1-3 and 5b, col. 1, lines 7-12, col. 3, lines 1-18, col. 4, lines 50-67, col. 5, lines 39, col. 6, lines 33-49, col. 9, lines 13-23 and col. 11, lines 20-36.

Therefore, it would have been obvious to one skill in the art at the time the invention was made to substitute the twisted-pair wires of **Chang et al** for the power line inputs of **Bouhenguel et al** in order to minimize of electromagnetic interference and to prevent of loosing data signal.

Regarding claim 18, **Bouhenguel et al** fails to disclose the predetermined reference is a voltage in a range of about 0.7 volts to about 5.0 volts. However, **Bouhenguel et al** teaches that the selected test signal has a sine wave form with various magnitudes and angles. Chang et al suggests that the presence signals are range from 3VDC to 5VDC, see col. 11, lines 20-25. Therefore, it would have been obvious to one skill in the art at the time the invention was made to adapt the selected test signal of **Bouhenguel et al** with magnitude about 3VDC to 5VDC such as of **Chang et al** because the data communication signals require of that voltage for minimizing of interference to radio waves and reducing power consumption.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bouhenguel et al** [US 5,742,513].

Regarding claim 22, **Bouhenguel et al** fails to disclose the predetermined time intervals is a time interval in a range of about 20 nanoseconds to about 280 nanoseconds.

However, **Bouhenguel et al** teaches that the sampling period 62 is about 833.3 microseconds, see col. 6, lines 58-60. Therefore, it would have been obvious to one skill in the art to recognize that it is a design choice to select the time intervals/periods such as about 20-280 nanoseconds, which depends on the signals provided from the generator.

4. Claims 23, 30 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bouhenguel et al** [US 5,742,513] in view of **Spencer et al** [US 6,233,128].

Regarding claim 30, **Bouhenguel et al** fails to disclose the storing a voltage corresponding to the measured predetermined characteristic in a capacitor. However, **Bouhenguel et al** teaches that the storage memory 41 is for storing of test signal result data and predetermined reference data having various magnitude, see Fig. 5, col. 6, lines 1-35, col. 11, lines 58-67 and col. 12, lines 1-7. **Spencer et al** suggests that each circuit breaker includes a CPU 76 connected to a plurality of sense inputs, a serial I/O communication port, a power supply and a non-volatile memory in data retention circuit 58 to store basic configuration parameters and addresses. The means for retaining data representing parameter information include charging a storage capacitor to a predetermined value corresponding to the parameter information being retained, writing the parameter information being retained to an EEPROM and writing the data containing the parameter information being retained into a static RAM, see Fig. 1, col. 2, lines 18-27 and col. 3, lines 3-12. Therefore, it would have been obvious to one skill in the art at the time the invention was made to substitute the means for retaining data

parameter information of **Spencer et al** for the test signal storage of **Bouhenguel et al** in order to prevent of loosing data information when the electrical power is low or lost.

Regarding claim 30, all the claimed subject matters are discussed between **Bouhenguel et al** and **Spencer et al** in respect to claims 23 and 29 above.

Regarding claim 41, all the claimed subject matters are discussed between **Bouhenguel et al** and **Spencer et al** in respect to claims 23 and 40 above.

### ***Conclusion***

5. Claims 23 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Abraham** discloses an apparatus for high frequency electrical line communication comprising capacitive circuits resonate with the transformer at a preselected frequency.  
[US 6,396,392]

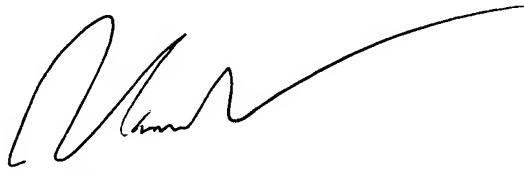
**Stich et al** discloses a standby power system having power conversion, output voltage control and line fault detection systems that detects the occurrence of AC line faults using a single digital line sense signal. [US 5,790,391]

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**Caird et al** discloses a distribution automation remote terminal unit, which directly connects to a voltage and current sensors on the feeder to sense the presence of signals on the distribution feeder. [US 5,237,511]

7. Any inquiry concerning this communication or earlier communications from examiner should be directed to primary examiner **Van Trieu** whose telephone number is (571) 272-2972. The examiner can normally be reached on Mon-Fri from 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. **Jeffery Hofsass** can be reached on (571) 272-2981.

A handwritten signature in black ink, appearing to read 'Van Trieu', with a long, sweeping horizontal stroke extending to the right.

**Van Trieu**  
**Primary Examiner**  
**Date: 12/2/04**